

[*APPARATUS AND METHODS FOR DETERMINING ISOTROPIC AND ANISOTROPIC FORMATION RESISTIVITY in THE PRESENCE OF INVASION*]

## Abstract

A logging tool includes a tool body; a simple transmitter comprising a single antenna disposed on the tool body; four simple receivers, each comprising a single antenna, disposed on the tool body and spaced apart from the simple transmitter to form four arrays; and an electronic module for controlling operation of the four arrays, wherein the simple transmitter is configured to generate a magnetic field having a transverse component, wherein each of the four simple receivers is sensitive to the magnetic field generated by the simple transmitter, and at least one of the four simple receivers is sensitive to the transverse component of the magnetic field generated by the simple transmitter, and wherein the four arrays are configured to provide measurements at at least three depths of investigation.